Pallid Sturgeon

Scaphirhynchus albus

Best Management Practices

Missouri Department of Conservation

Common name ▪ Pallid Sturgeon
Scientific name ▪ *Scaphirhynchus albus*
State status ▪ Endangered
Federal status ▪ Endangered

Ecology

The sturgeons are a small group of primitive fishes with a wide distribution in the Northern Hemisphere. The pallid sturgeon is a large, ancient fish limited to the Missouri River and lower Mississippi River drainage basins. These fish inhabit bottom areas of open channels that have strong current and firm sandy substrate. They may also be found along sandbars and behind wing dikes. Pallid sturgeons consume aquatic insects, crustaceans, mollusks, marine worms, fish and the eggs of other fish. These bottom-dwelling fish prefer strong current and live in areas having firm substrate. At certain times of the year, they can be found along sand and gravel bars or in deeply scoured holes. The pallid sturgeon are large fish with a heterocercal tail, a long slender caudal peduncle, a flat shovel-shaped snout, four fringed barbels on the snout, a ventral mouth, and large bony scutes on the head, back, and sides. They are generally long-lived, possibly living as long as 41 years. Males reach sexual maturity at 5 to 7 years. Females are believed to first spawn at 15 to 20 years. Spawning behavior is thought to occur April through mid-June, when water temperatures reach a range between 5-70 F.

Photo Credit: http://endangered.fws.gov/i/e2u.html

Reasons for Decline

A lot of factors have contributed to the decline of these species including habitat alterations by man to the Missouri and Mississippi rivers, over harvest, pollution, and the introduction of exotic species. However, habitat loss and past, unregulated commercial fishing are the primary reasons for their decline. For millions of years, sturgeon depended on the diverse habitat found in the Missouri and Mississippi rivers. Historically, our big rivers were wide and shallow consisting of braided channels, sand bars, gravel bars, sand shoals and numerous wetlands. Critical habitat necessary for pallid sturgeon survival was all but destroyed during the development of the big rivers for flood control and commercial navigation. In just the last 65 years, 28% of the Missouri and Mississippi rivers have been impounded by dams creating unsuitable lake-like habitat. A more recent problem that will affect the future status of the pallid sturgeon is hybridization with shovelnose sturgeon, which is occurring likely because of a lack of spawning sites for both of these species.

Recommendations

Habitat protection and restoration in the Missouri and Mississippi rivers and their main tributaries will be necessary to ensure the survival of the pallid sturgeon because these are the only sites that provide suitable habitat for these large river fishes. Habitat restoration and improvement is one of the most important keys to the recovery of our endangered sturgeon. Projects are being designed and installed which will increase the diversity of habitat for our endangered sturgeon. The Missouri Department of Conservation has also recently started a long term, state-wide sturgeon monitoring project to track population trends for all Missouri's species.

Beneficial Practices

- Limit livestock access to streams.
- Protection and restoration of riparian corridors along streams.
- Nutrient and pest management on adjacent agricultural fields that results in reduced opportunities for runoff.
- Practices that control erosion and prevent the delivery of sediment to the aquatic system will prove beneficial to this species.

Adverse Practices

- Alteration of channel island tips since pallid sturgeon appear to show a strong affinity for this habitat.
- Channel alterations that limit or eliminate shallow, sloping bank habitat.
- Constructing dams and other impoundment structures in large rivers and their tributaries.
- Overlooking erosion and ignoring sediment control.
- Removing or degrading the riparian corridor along streams.
- Application of pesticides, herbicides, insecticides, and inorganic fertilizers that alter aquatic vegetation and/or micro- or macroinvertebrates.

Information Contacts

For further information regarding regulations for development in rivers and streams, contact:

Missouri Department of Conservation
Policy Coordination Section
P.O. Box 180
2901 W. Truman Blvd
Jefferson City, MO 65102-0180
Telephone: 573-751-4115
http://www.mdc.mo.gov/nathis/endangered/

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 800-361-4827 / 573-751-1300
http://www.dnr.mo.gov/env/index.html

U.S. Army Corps of Engineers
Regulatory Branch
700 Federal Building
601 E. 12th Street
Kansas City, MO 64106-2896
Telephone: 816-389-3990
http://www.nwk.usace.army.mil/

U.S. Environmental Protection Agency
Water, Wetlands, and Pesticides Division
901 North 5th Street
Kansas City, KS 66101
Telephone: 913-551-7003 / 800-223-0425
http://www.epa.gov/region7/

U.S. Fish and Wildlife Service
Ecological Services Field Office
101 Park DeVille Dr., Suite A
Columbia, MO 65203
Telephone: 573-234-2132
http://www.fws.gov/midwest/partners/missouri.html

Legal

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat.

Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law or by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

“State Endangered Status” is determined by the Missouri Conservation Commission under constitutional authority, and specific requirements for impacts to such species are expressed in the Missouri Wildlife Code, rule 3 CSR 10-4.111.

Species listed under the Federal Endangered Species Act must be considered in projects receiving federal funds or requiring permits under the Clean Water Act, with compliance issues resolved in consultation with the U.S. Fish and Wildlife Service.